



Multi-Graphic

MCPB & Series 115B, 2223R, & 2233R

Installation and User Manual

© 2009 Bogen Communications, Inc.
All rights reserved.
Specifications subject to change without notice.
54-5875-03B 0903

Notice

Every effort was made to ensure that the information in this guide was complete and accurate at the time of printing. However, information is subject to change.

Important Safety Information

WARNING: To Reduce The Risk of Fire Or Electric Shock, Do Not Expose This Apparatus To Rain Or Moisture.

Always follow these basic safety precautions when installing and using the unit:

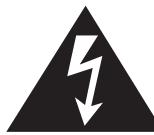
1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. DO NOT block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade, or the third prong, are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

IMPORTANT

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Contents

SYSTEM DESCRIPTIONS	4
Series 115B	4
Series 2223R & 2233R.....	4
OPTIONS	5
LPC4 Loop Priority Control Option.....	5
MCP-EXP Input Expander Option	5
ASF4 Alarm-Signaling Option	6
PBA3 Push-Button Alarm Panel Option	6
CPP Handset Communication Option	6
Connections.....	6
Operation	6
Receiving a Call From a Staff Station	6
Calling a Staff Location	7
Calls Between Staff Stations.....	7
SCT Six-Circuit Time Signaling Option.....	8
TWK351/4 Two-Wire Call-in Options	9
MCPB PROGRAM CONTROL PANEL	9
INSTALLATION.....	10
Accessory Connector	10
Interconnections.....	10
Phantom Power	11
MIC1 Monitor Mute	11
TECHNICAL SPECIFICATIONS	11
LIMITED WARRANTY	Back Cover

System Descriptions

Series 115B

The Bogen Multi-Graphic Series 115B Centralized School Sound Systems provides separate program and intercom channels to permit intercommunication with any speaker-equipped location, without interrupting the distribution of program material to the remaining stations.

The basic system components include the MCP35A master control panel model SBA225 room selector and annunciator panels and a CD Player/Receiver.

The system is available in either a single-section desktop console (with a capacity of up to 75 speaker-equipped stations), or in a dual-section desktop console (with a capacity of up to 125 speaker-equipped stations).

All Series 115B systems include provisions for single-channel time signal distribution and for voice call-in. Series 115B also provides an emergency page function, which permits emergency announcements to all speaker-equipped stations. These announcements override all other system functions and are transmitted at a predetermined level. Provisions are included to permit emergency paging from a telephone, interphone, or microphone.

Series 2223R & 2233R

The Bogen Multi-Graphic Series 2223R provides separate program and intercom channels to permit intercommunication with any speaker-equipped location without interrupting the distribution of program material to the remaining stations.

The basic system components include the MCP35A control panel, SBA225 room selector and annunciator panels, and a CD Player/Receiver.

The Series 2233R provides two separate program channels (Channel A/Channel B) and an intercom channel. The basic system components include the MCP35A control panel with input and amplification facilities for the Channel A program; the MCPB control panel with input and pre-amplification facilities for the Channel B program; the SBA325 room selector and annunciator panels; CD Player/Receiver; and the Channel B program amplifier.

The Series 2223R and 2233R are available in a 42", 61-1/4", and 77" upright floor rack. Maximum system capacity is generally 175 speaker stations (consult the Bogen Application Engineering Department if larger capacity is desired).

Series 2223R and 2233R include provisions for single-channel time signal distribution and for call-in. Also provided is an emergency page function, which permits emergency announcements to all speaker-equipped stations. These emergency announcements override all other system functions and are transmitted at a predetermined level. Provisions are included to permit emergency paging from a telephone, interphone, or microphone.

Options

LPC4 Loop Priority Control Option

The LPC4 is used to interface the school sound system with satellite systems, such as those found in gymnasiums, multi-purpose rooms, etc. The option also provides emergency seizure of the satellite system and bridging of their outputs into the main system. Refer to figure 1.

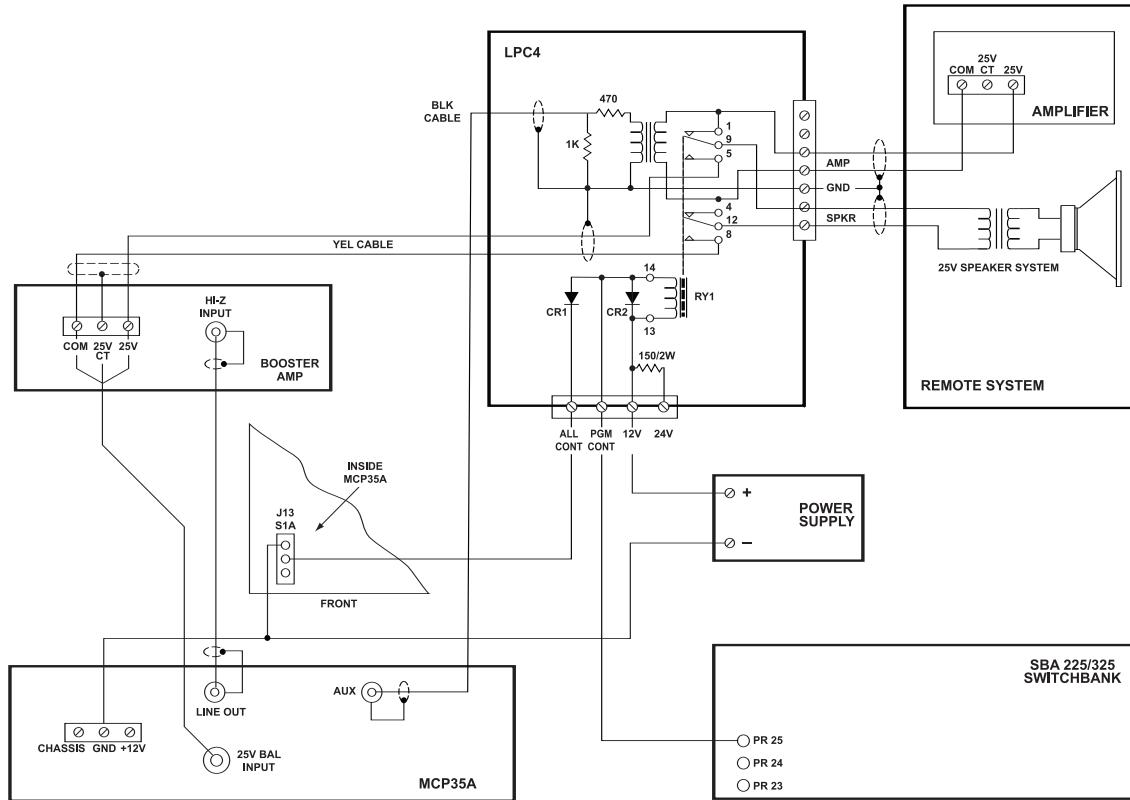


Figure 1 - Wiring Diagram, LPC4 Loop Priority Circuit

MCP-EXP Input Expander Option

The MCP-EXP Expander Panel may be used to increase the input capabilities of the sound system. Each panel has two banks of four switches and adds up to eight additional inputs to the MCP35A. Each bank may be connected to the microphone input (MIC1 or MIC2) or AUX input of the MCP35A. Banks may be interconnected, allowing all eight inputs to feed into one MCP35A MIC or AUX input. A multiple expander panel is easily interconnected to further increase the input capacity of the system.

An input is provided on each bank to replace the MCP35A MIC or AUX input into which the expander is connected. This input is accessed when all switches in the bank are in the out (off) position. When a switch is placed in the on position, the input from each high-number switch on the bank is overridden, i.e., the input on switch 3 overrides the input on switch 4, the input on switch 2 overrides the input on switches 3 and 4, and the input on switch 1 overrides the inputs on switches 2, 3, and 4.

Vertical 0.156 centerlines headers are provided to connect balanced or unbalanced microphones and auxiliary equipment (tuners, CD players, tone generators, etc.). The panel is designed for easy rack mounting and occupies one rack space.

ASF4 Alarm-Signaling Option

The ASF4 option provides four distinct tones for use as a manually-operated class change or for alarm signaling purposes (slow whoop, chime, steady, and interrupted tone). Tones are activated by remote contact closure. (Note: If the MCP35A built-in tone signal generator is not used for time signaling, it can be used as a single-tone alarm and would require only a remote contact closure.) Refer to Figure 2.

PBA3 Push-Button Alarm Panel Option

The PBA3 Alarm Panel is used with the ASF4 feature to provide activation of three separate alarm signals and includes a reset button. Refer to Figure 2.

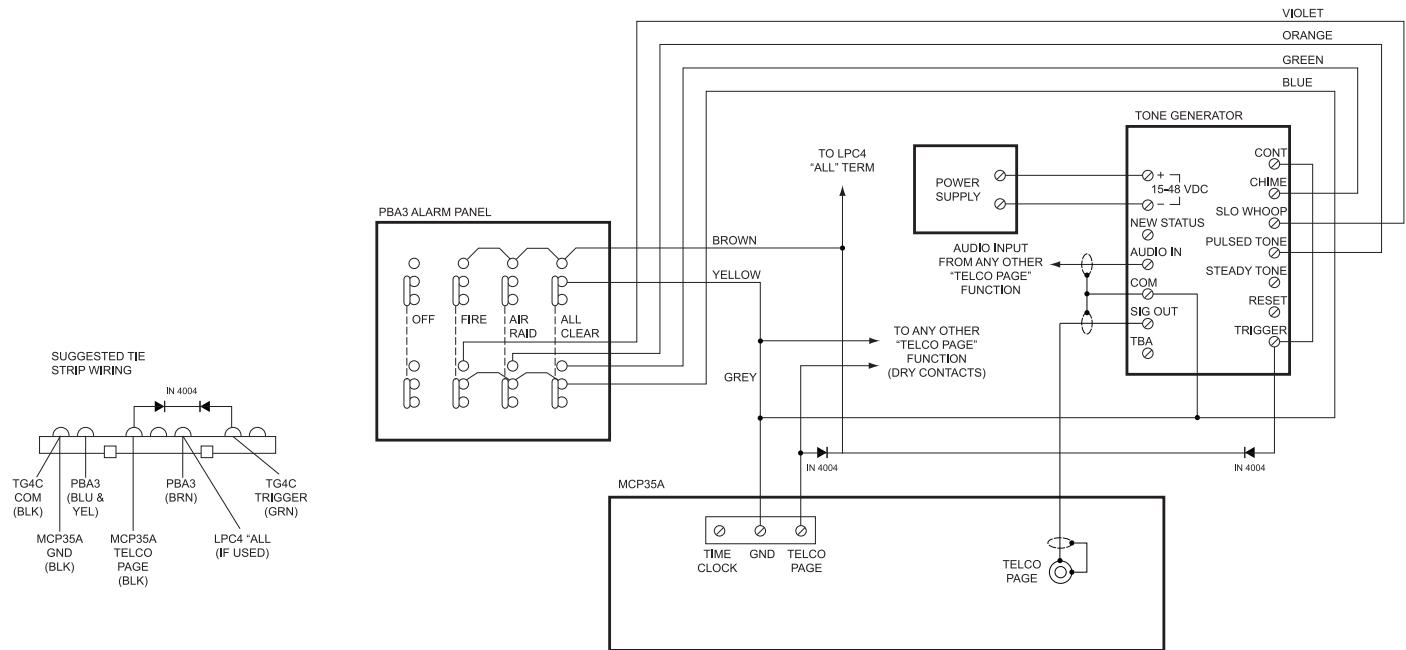


Figure 2 - Wiring Diagram, ASF4 Alarm Signaling with PBA3

CPP Handset Communication Option

The CPP option uses the Bogen TPS4 panel to provide for control center-to-classroom and classroom-to-classroom phone communications. The TPS4 includes: an ON/OFF switch, which disconnects the intercom function of the MCP35A to allow private telephone conversations; a CALL button which transmits a call tone to selected speakers; an IN-USE LED, which illuminates when handsets are in use; and a disconnect function, which illuminates an LED and sounds a tone when all handsets are on-hook. Requires the Model HS201C or HS202C staff classroom phone and Model HS201C phone at the console. Refer to Figure 3.

Connections

Two terminal strips are included to connect the HS201C telephone handset and power supply. Connect the HS201C to the terminal strip labeled HS-20 and GND. Connect a power supply to the terminals labeled +12V and GND. Be sure to observe polarity.

Operation

Receiving a Call From a Staff Station

1. When the call-in switch at a staff location is activated, the corresponding LED on the room selector panel will illuminate and a tone will sound. Answer the call according to the instructions printed on the MCP35A under INTERCOM.
2. To speak over handsets, instruct the staff location to pick up the handset. Then pick up the console handset and press the ON/OFF switch on the TPS4 (suspends normal intercom communication). The green IN-USE LED will illuminate.

3. When a conversation is finished, press the ON/OFF switch to release it. Note that if both parties hang up before the TPS4 is turned off, the red DISCONNECT LED will illuminate and the call-in tone will sound (returning the switch to the OFF position will extinguish both). Return the room selector switch to OFF or intercom communication will resume.

Calling a Staff Location

1. Press the ON/OFF switch on the TPS4 and pick up the console handset. Select the station to be called by placing the appropriate switch on the room selector panel in the "C" position.

2. Call the staff location by pressing the CALL button, which sends a call tone to the station loudspeaker. Wait for the other party to respond by picking up the handset.

3. When the conversation is finished, follow step 3 under **Receiving a Call From a Staff Station**.

NOTE: Alternate Method - Call the station using the INTERCOM function of the MCP35A, then follow steps 2 and 3, under **Receiving a Call From a Staff Station** (page 6).

Calls Between Staff Stations

Two staff stations can communicate privately after being connected by the operator at the console (place each room selector switch in the "C" position). The console operator may leave the conversation by hanging up the handset. As long as the two staff handsets are off hook, the green IN-USE LED will illuminate. When the handsets are returned to the switch hook, the DISCONNECT LED will illuminate, and the Call-In Tone will sound at the MCP35A. At this point the operator resets both the room selector panel switches to OFF and presses the ON/OFF switch on the TPS4 to release it.

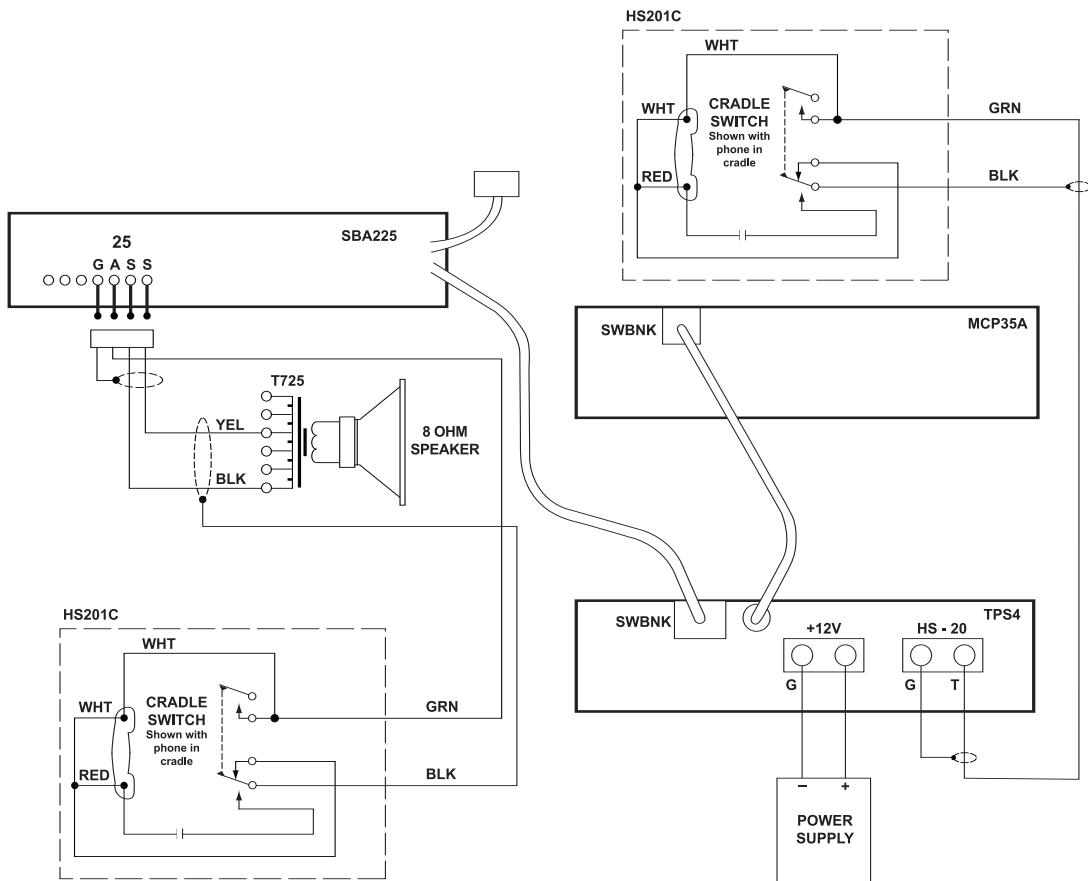


Figure 3 - Wiring Diagram, CPP Handset Communication Feature

SCT Six-Circuit Time Signaling Option

The SCT option is used with the 6-circuit master clocks and the Bogen TZMA Time Zone Relay module, to provide automatic distribution of class change signals. Class change signal interrupts programming only at those speakers programmed, via the TZMA, to receive the signal. Requires a dedicated time signaling amplifier, a dry contact closure for each circuit plus a common closure for each circuit plus a common closure for each circuit. Refer to Figure 4.

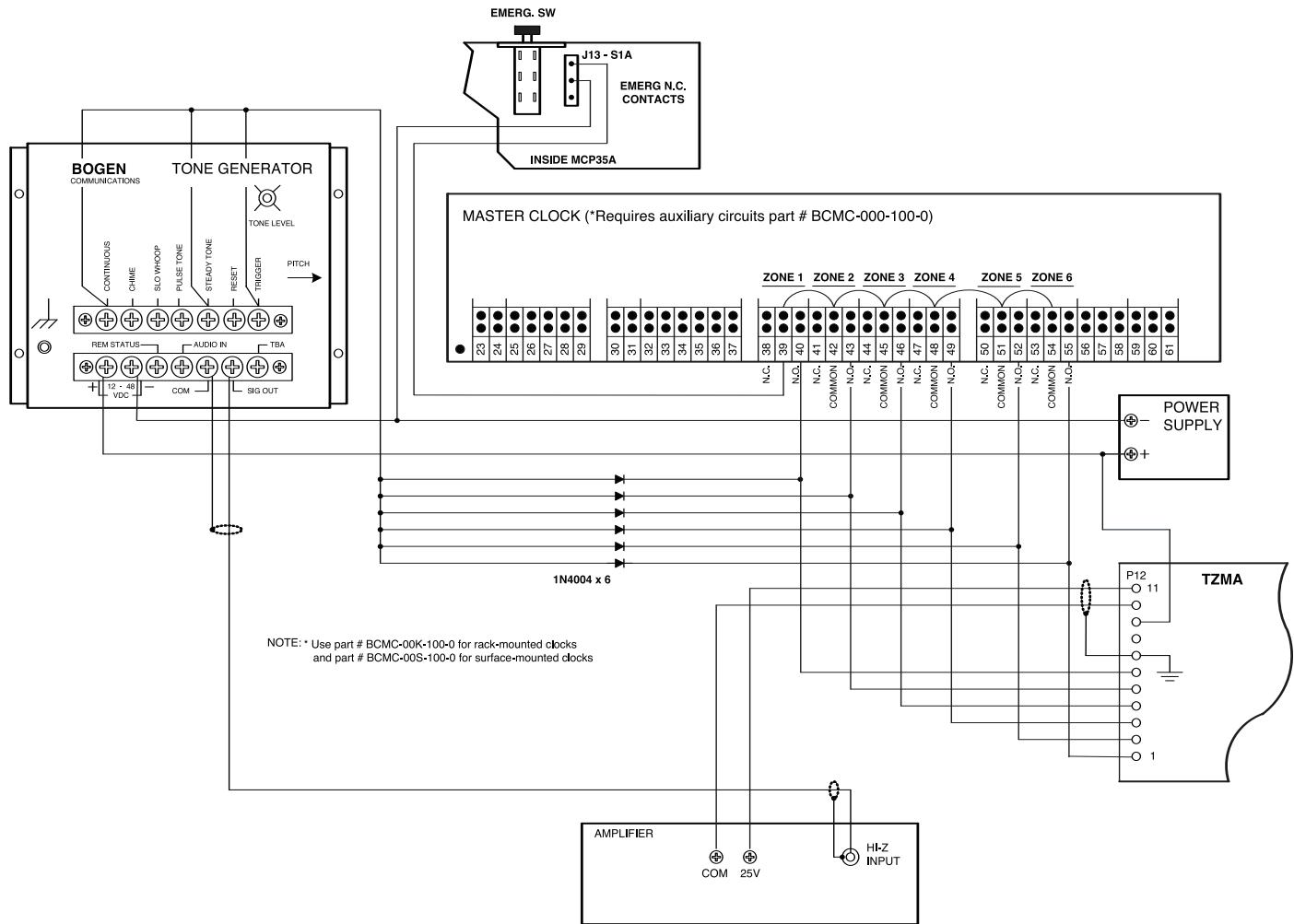


Figure 4 - Wiring Diagram, SCT Six-Circuit Time Signalling Feature

TWK351 and TWK354 Two-Wire Call-in Options

The TWK351 (Series 115B, 2223R) and TWK354 (Series 2233R) are used only with the CA10A Call-in Switches to allow light annunciated call-in with 2-conductor shielded cable. Refer to Figure 5.

Note: Do not use SCR25A with 2-wire call-in. Refer to MP35A Installation Manual.

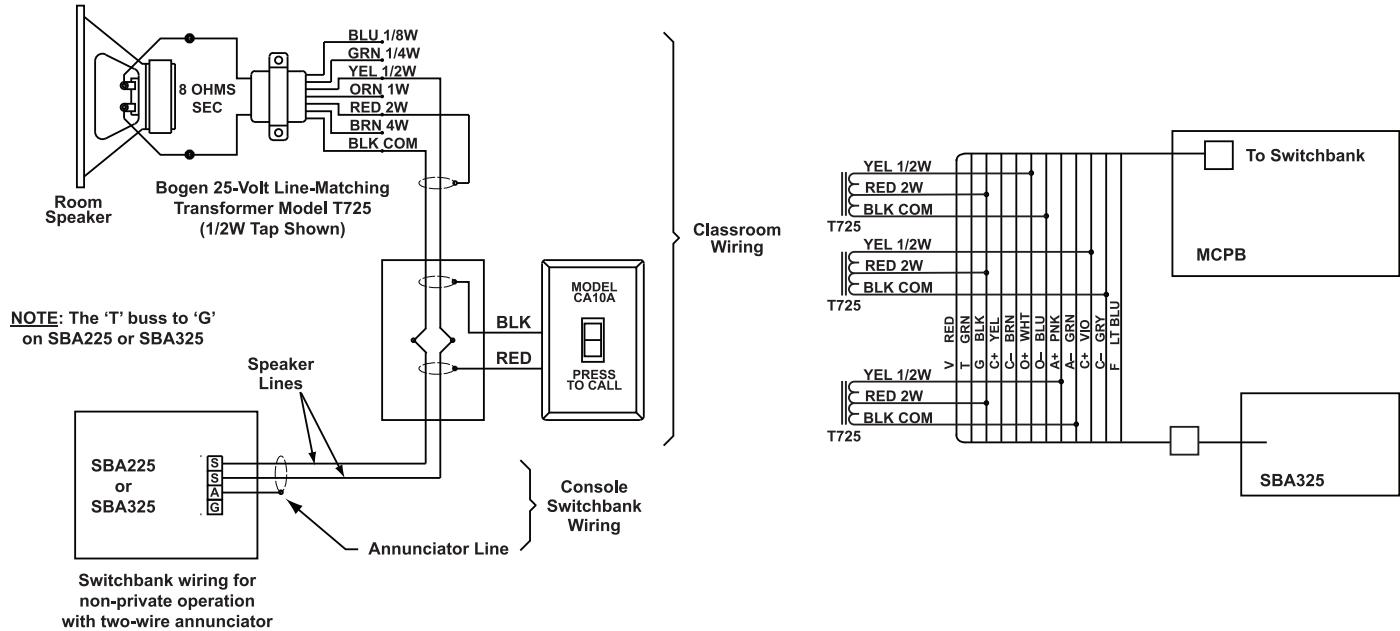


Figure 5 - Wiring Diagram, 2-Wire Call-In Modification

MCPB Program Control Panel

The Bogen Model MCPB is a program control panel designed to operate with Bogen Series 2233R Centralized School Sound Systems. It includes input and pre-amplification facilities, as well as monitoring control for a separately amplified program channel (Channel B). The panel interfaces with the Bogen Model MCP35A Master Control Panel (which provides the Channel A program facilities and MCPB power supply), the SBA325 room selector and annunciator panels (used to place selected speakers on the A or B program busses, or select intercom function) and a separate Channel B program amplifier.

The MCPB includes inputs for two Lo-Z microphones and an auxiliary program source (e.g., CD player/receiver). Rear panel mounted input gain controls are provided to adjust the input level of each source. Phantom power is available for the microphone inputs, selectable with a printed circuit board jumper (see page 11).

Selection of the Channel B program source is by simple push button operation, following the color-coded guidelines. A two-position switch (MONITOR A/B) allows selective monitoring of either program channel through the built-in monitor speaker on the MCP35A control panel. A level control and LED meter are provided to adjust and visually monitor the level.

A special All-Call feature overrides the Channel B bus when the MCP35A is used to make emergency announcements, telephone pages, or All-Call announcements.

Interconnection with the MCP35A, SBA325 room selector panels, and Channel B program amplifier are easily accomplished. The panel is finished to match the associated sound system equipment and uses only one rack space.

Installation

Caution: Installation of the MCPB requires removal of equipment covers, exposing the risk of electrical shock. Unauthorized modification can also void the warranty. For this reason, installation should be performed by qualified service individuals only.

Accessory Connector

An Accessory connector (included with the MCPB) must be installed in the MCP35A prior to interconnecting these two units. Refer to Figure 6 and the following instructions.

1. Remove the top cover of the MCP35A.
2. Insert the accessory connector in the rear panel cutout marked ACCESSORY.
3. Remove the existing connectors from J10 and J14.
4. Push the female connectors on the accessory cable onto the terminal pins of J10, J11, and J14, as shown in Figure 6.
5. Replace the top cover.

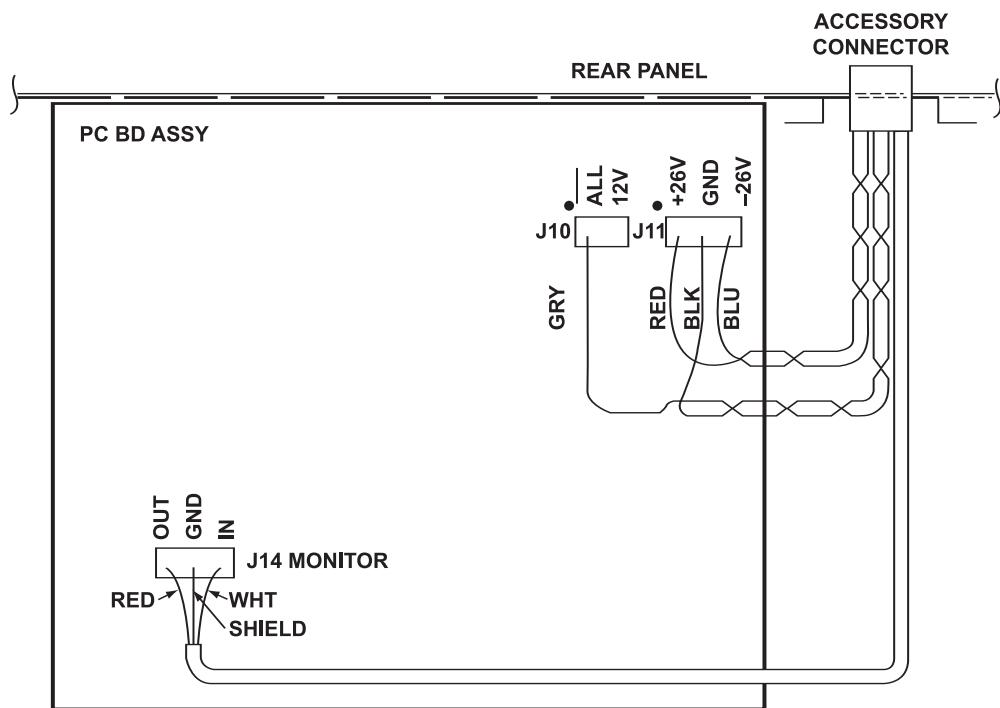


Figure 6 - Wiring Diagram, Installation of Accessory Connector in MCP35A

Interconnections

Refer to Figure 7.

1. Connect the male 6-pin cable connector, labeled ACCESSORY, on the MCPB to the female 6-pin connector, labeled ACCESSORY, on the MCP35A.
2. Connect the male 9-pin cable connector, labeled SWITCHBANK, on the top of the MCPB, to the 9-pin female connector, labeled TO SWITCHBANK, on the MCP35A .
3. Connect the male 12-pin connector from the SBA325 switchbank to the 12-pin female connector on the MCPB labeled TO SWITCHBANK.
4. Connect the MCPB Line Out to the Hi-Z Input of the Channel B amplifier.
5. Connect the 25V output of the amplifier to the 25V input on the MCPB.

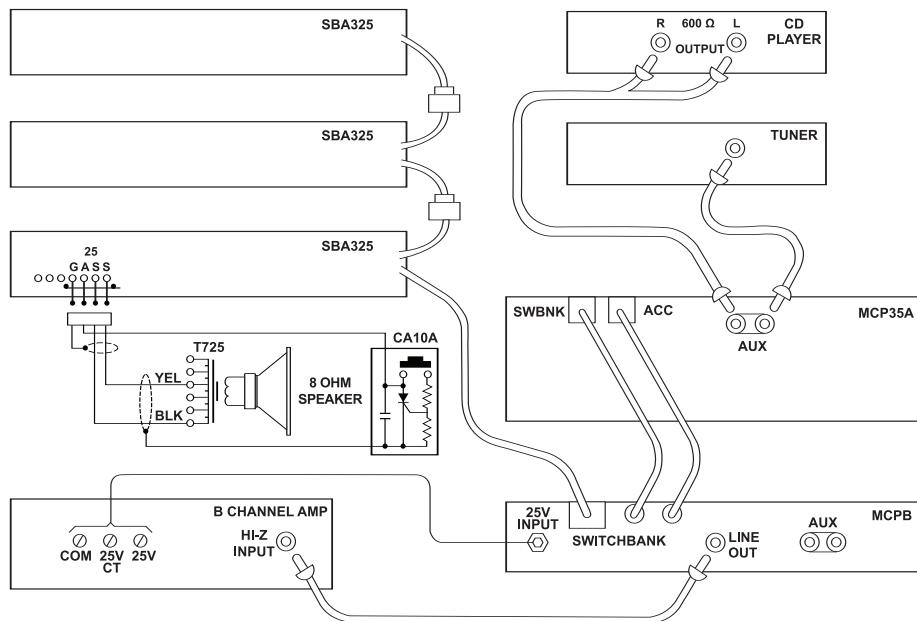


Figure 7 - Wiring Diagram, Typical MCPB Interconnection

Phantom Power

Phantom Power may be enabled for MIC1 or MIC2 by connecting pins 2 and 3 on the printed circuit board shunts labeled J1 and J2, respectively.

MIC1 Monitor Mute

If the MCP35A console microphone is connected to the MCPB MIC1 input, move the shunt labeled J3 (on MCPB) to the ON position.

Technical Specifications

Rated Output: B Program – 1.8V into Hi-Z load (line out to booster)

Note: The output is unbalanced; nominal output impedance is 5.6 kilohms

Frequency Response (at rated output)

B Program – MIC Inputs: Shaped for maximum intelligibility (-3 dB @ 300 Hz and 15 kHz); AUX Input: +1, -3 dB from 80 Hz to 15 kHz

Distortion

Less than 1% @ Rated Power and Bandwidth

Input Sensitivity

B Program – MIC Inputs: 300 μ V balanced Lo-Z for rated output; AUX Input: 100mV unbalanced Hi-Z for rated output

Signal-to-Noise Ratio

B Program – MIC Inputs: 60 dB below rated output; AUX Input: 80 dB below rated output

Controls/Indicators :

Input Gain (rear panel):

MIC1, MIC2, AUX

Program Selection:

MIC1, MIC2, AUX

Monitor:

Two-position switch selects program channel for monitoring from MCP35A

Program:

Adjusts Channel B program level

B Program Level:

LED Indicators (N - normal, P - peak, O - overload)

Dimensions:

19" W x 1-3/4" H x 10" D

Limited Warranty; Exclusion of Certain Damages

The Bogen Multi-Graphic is warranted to be free from defects in material or workmanship for two (2) years from the date of sale to the original purchaser. Any part of any Bogen product covered by this warranty that, with normal installation and use, becomes defective (as confirmed by Bogen upon inspection) during the applicable warranty period, will be repaired or replaced by Bogen, at Bogen's option, provided the product is shipped insured and prepaid to: Bogen Factory Service Department, 50 Spring Street, Ramsey, NJ 07446, USA. Repaired or replacement product will be returned to you freight prepaid. This warranty does not extend to any of our products that have been subjected to abuse, misuse, improper storage, neglect, accident, improper installation or have been modified or repaired or altered in any manner whatsoever, or where the serial number or date code has been removed or defaced.

THE FOREGOING LIMITED WARRANTY IS BOGEN'S SOLE AND EXCLUSIVE WARRANTY AND THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY. BOGEN MAKES NO OTHER WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED AND EXCLUDED TO THE MAXIMUM EXTENT ALLOWABLE BY LAW. Bogen's liability arising out of the manufacture, sale or supplying of products or their use or disposition, whether based upon warranty, contract, tort or otherwise, shall be limited to the price of the product. IN NO EVENT SHALL BOGEN BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, LOSS OF DATA OR LOSS OF USE DAMAGES) ARISING OUT OF THE MANUFACTURE, SALE OR SUPPLYING OF PRODUCTS, EVEN IF BOGEN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR LOSSES. Some States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from State to State.

Products that are out of warranty will also be repaired by the Bogen Factory Service Department -- same address as above or call 201-934-8500. The parts and labor involved in these repairs are warranted for 90 days when repaired by the Bogen Factory Service Department. All shipping charges in addition to parts and labor charges will be at the owner's expense. All returns require a Return Authorization number. For most efficient warranty or repair service, please include a description of the failure.

Products manufactured and labeled by other companies may be covered by warranties offered by such companies. Please call Bogen Customer Service or refer to product packaging for manufacturer's warranty for non-Bogen branded products.

12/2008

BOGEN[®]
COMMUNICATIONS, INC.

50 Spring Street, Ramsey, NJ 07446, U.S.A.
Tel. 201-934-8500, Fax: 201-934-9832, www.bogen.com